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ABSTRACT of the INVENTION

A device to determine the level of a substance of interest in a patient's body and provide a therapeutic amount of medicament is disclosed. The level of a substance of interest in the patient's body is determined by iontopheretically sampling the patient's blood and then analyzing the resulting sample to determine the level of the substance of interest. The information about the level of a substance of interest is transmitted to an implanted drug pump in the patient's body. In the preferred embodiment, the substance of interest sensor is an external sensor applied to the user's skin. In an alternate embodiment, the sensor may be implanted. The preferred method of transmitting information about the level of a substance of interest determined by the sensor is transmitted to an implanted drug pump in the patient's body is via a so called "body bus". The "body bus" is a telemetry system where the patient's own body provides the interconnection between the iontopheretic device and the implanted drug pump.